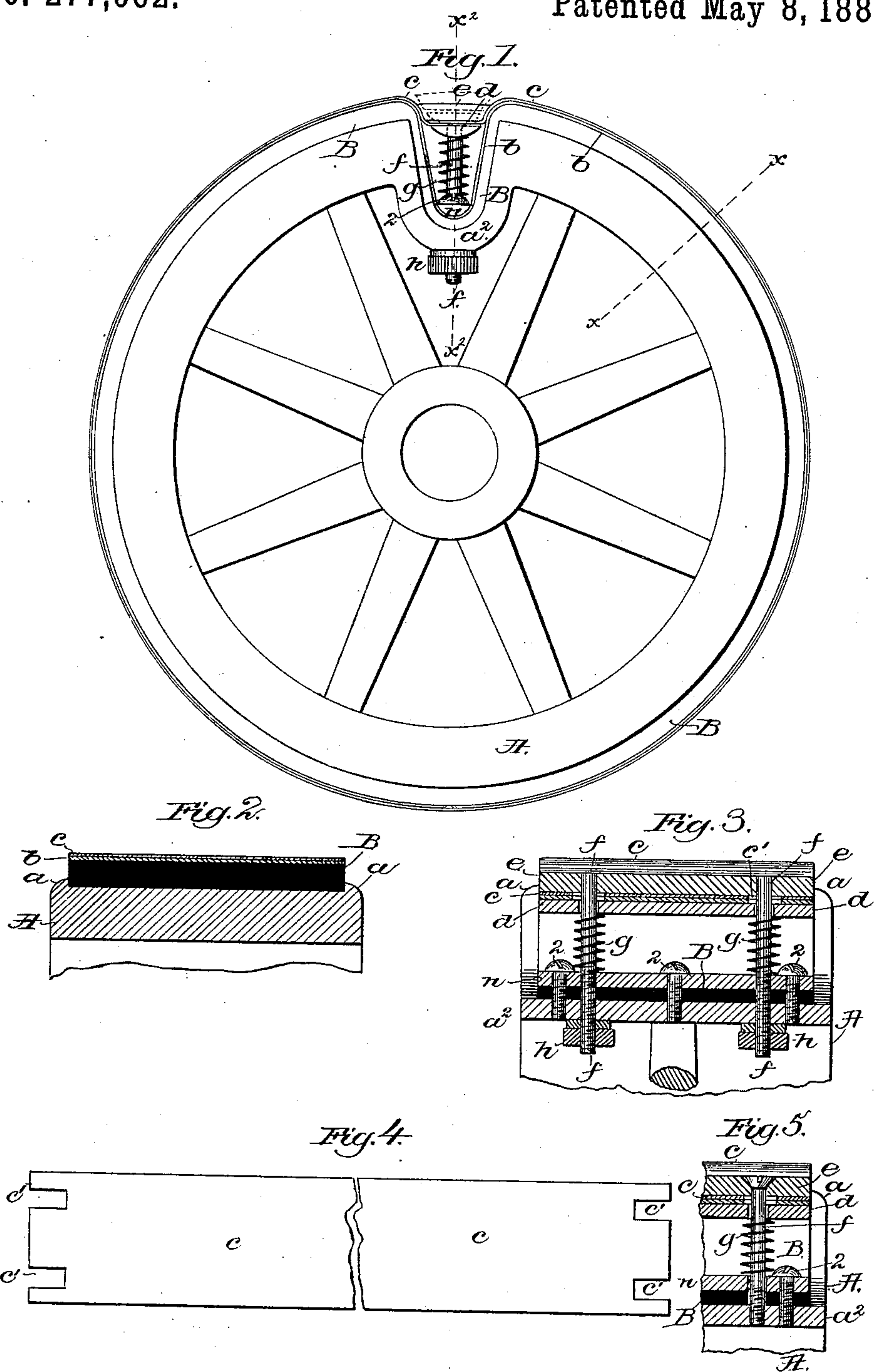


(No Model.)

A. H. ROLFE.
ABRASIVE WHEEL.

No. 277,062.

Patented May 8, 1883.



Witnesses.

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UNITED STATES PATENT OFFICE.

ALBERT H. ROLFE, OF BALDWINSVILLE, MASSACHUSETTS.

ABRASIVE WHEEL.

SPECIFICATION forming part of Letters Patent No. 277,062, dated May 8, 1883.

Application filed February 2, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALBERT H. ROLFE, of Baldwinsville, county of Worcester, State of Massachusetts, have invented an Improvement
5 in Abrasive Wheels, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to that class of abrasive
10 wheel which is covered with sand-paper, and is employed for abrading or grinding leather, wood, &c.

In this my invention I have taken a flanged wheel or pulley, and in the annular groove in
15 its periphery, between its flanges, I have stretched an endless india-rubber band, thus forming a yielding bed. On this bed I preferably stretch a felt or cloth band to protect the rubber and serve as a seat for the abrasive
20 paper or cloth strip, which I shall call the "face-strip." The wheel or hub is provided with a cross-groove in which is placed a clamp which engages the two ends of the abrasive or face strip, and the clamp is then moved toward the
25 center of the said wheel or pulley by a suitable screw or bolt, stretching the abrasive or face strip from its ends about the wheel or pulley.

Figure 1 represents in side elevation a wheel
30 or pulley containing my improvements; Fig. 2, a partial cross-section of the same on the dotted line x ; Fig. 3, a partial section on the dotted line x^2 . Fig. 4 is a detail showing the abrasive or face strip removed, and Fig 5 a
35 modification to be referred to.

The wheel or pulley A, of any suitable size or material, preferably cast metal, has at each side flanges a a to receive between them the
40 endless india-rubber belt or band which forms the bed B, a portion of the said belt being drawn down into a cross groove or space in the wheel A, as shown in Figs. 1 to 3, by a bar, n , through which are passed screws 2, the lower ends of which are screwed into the part
45 a^2 of the depressed portion of the said wheel. The india-rubber bed having been applied, I then preferably stretch over it a strip of felt or cloth, b , and over it I apply the abrasive or
50 face strip c , preferably of paper or cloth coated with glass, sand, emery, or other similar material. The ends of the strip c , notched, as at

c' , Fig. 4, are placed between the two plates or jaws d e , when the said plates or jaws are elevated and in their dotted-line position, Fig. 1, after which, by means of suitable bolts or
55 screws, the said jaws are made to clamp the ends of the face-strip c between them, and the said jaws or plates are drawn down into the space or groove across the wheel A and below the surface of the main portion of the said
60 face-strip, as shown in Fig. 1 in full lines, thus drawing the face-strip closely about the wheel by a direct pull upon the ends of the said strip.

In Figs. 1 and 3 the plate e has bolts or
65 screws f attached to it and extended loosely down through the plate d , thence through springs g and the portion a^2 , where nuts h are applied to them. When the nuts are turned
70 nearly off the ends of the bolts or screws f , the springs g , acting on the plate d , lift it and the plate e nearly flush with the periphery of the
75 bed B, after which any further movement of the bolts f outward will cause the plate e to be moved away from the plate d , thus leaving a
space or opening into which the ends of the
80 face-strip c may be easily inserted, the notches c' passing over the said bolts. After this, by turning the nuts h in the chamber to draw the bolts toward the center of the wheel A, the
plates e d will first be clamped upon the ends
85 of the face-strip, and as the plates e d move with the bolts the ends of the strip c will be clamped with a force depending upon the force of the compressed springs g , and the said strip
85 c , drawn upon at its ends, will be fitted closely and smoothly about the wheel A or its elastic bed B.

In Fig. 5 I have shown a modification where-
90 in screws are employed instead of bolts, as in Figs. 1 and 3, to move the plates d e .

By employing screws I may use a screw-
driver and operate from the outside of the wheel rather than at the inner side, as when the nuts are employed as in Figs. 1 and 3.

I claim—

95 1. The wheel or pulley provided with the flanges a and a cross groove or space, and the endless belt or band to constitute a bed, combined with means to draw and hold the said
100 belt or band stretched about the said wheel or pulley, substantially as described.

2. The wheel or pulley provided with the

cross groove or depression, and an endless india-rubber band extending about the same to constitute a bed, and independent screws 2, or equivalents, to secure a bight of the said band
5 down into the said groove, combined with the abrasive strip, jaws, or plates, and other bolts or screws, *f*, to operate them, and springs to act upon the jaws or plates, whereby the ends of the said strip, placed between the said jaws, as
10 described, may be drawn and fitted to said wheel or pulley by the movement of the said bolts or screws, while the screws 2 remain unchanged, substantially as set forth.

3. The plates *e d* to grasp the abrasive or
15 free strip at its ends, as described, and springs *g* to support, and bolts or screws to operate, the said plates, combined with the wheel or pulley *A*, substantially as described.

4. The wheel or pulley *A*, its elastic or india-rubber bed composed of an endless belt or band stretched thereon, combined with the
20 plates or jaws *d e* and bolts or screws to operate them, and with an abrasive or face strip engaged at its ends, as described, between the
25 said plates or jaws, whereby the said strip is drawn from its ends closely about the elastic bed on the said pulley, substantially as described.

5. The wheel or pulley provided with the
30 flanges *a* and a cross groove or space, and the endless belt or band to constitute the bed, and

the felt or cloth covering to protect the said bed and serve as a seat for the abrasive paper or cloth strip, combined with means to draw
35 and hold the said belt or band and protecting-strip stretched about the said wheel or pulley, substantially as described.

6. The wheel or pulley provided with the cross groove or depression, and an endless india-rubber band and strip of felt or cloth or
40 equivalent material extended about the said wheel or pulley, combined with screws or equivalent means to hold a portion of the said band and strip of felt down into the said groove, substantially as described. 45

7. The wheel or pulley *a*, its elastic india-rubber bed composed of an endless belt or band, and a protecting belt or band stretched thereon, combined with the plates or jaws *d e*,
50 and bolts or screws to operate them, and with an abrasive or face strip engaged at its ends, as described, between the said plates or jaws, whereby the said strip is drawn from its ends closely about the elastic bed on the said pulley,
55 substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT H. ROLFE.

Witnesses:

E. B. TAYLOR,
CARRIE E. TAYLOR.